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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,244	01/26/2004	Yingxue Li	074078.0134	4161

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EXAMINER	
PHU, SANH D	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,244	LI ET AL.	
	Examiner	Art Unit	
	Sanh D. Phu	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *47* is/are allowed.

6)☒ Claim(s) *1-9,12-24,27-39,42-46* is/are rejected.

7)☒ Claim(s) *10,11,25,26,40 and 41* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The IDS filed 2/16/2004 and 8/12/2006 have been considered and recorded in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-9, 12-24, 27-39 and 42-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Walton et al (2003/0112880).

-Regarding to claims 1 and 46, see figures 3, 4C, 5 and 6A, [0131-0135, 0158-0160, 0177-0192, 0200-0227]), Walton et al discloses a method (see figure 3) and associated system for communicating a signal, comprising:

procedure/device (332) (see figure 3) of establishing one or more quality indicators (full/partial-CSI) at a first communication device (310), the first communication device comprising a plurality of antenna elements (324a,..,324t), the one or more quality indicators indicating a quality of one or more communication links between the first communication device (310) and one or more second communication devices (350);

procedure/device (334, 314) (see figure 3) of determining a modification (e.g., Coding Control (1), Modulation Control (1), Weights (1), etc., (see figure 4C)) according to the one or more quality indicators, the modification describing at least one adjustment of one or more modulation features of a plurality of modulation features for a frequency subband;

procedure/device (418) (see figure 4C) of modulating (Information Bits (1)), as at least a subset of a plurality of signals (Information Bits (1),..., Information Bits (N_T)) in accordance with the modification, a signal of the

plurality of signals associated with an antenna element (324a) of the plurality antenna elements (324a,.., 324t), a signal of the plurality of signals having the frequency subband; and

procedure /device (324a,.., 324t) (see figure 4C) of sending the plurality of signals from the plurality of antenna elements (324a,.., 324t) to yield a transmitted signal.

-Regarding to claim 2, Walton et al discloses that establishing the one or more quality indicators at the first communication device further comprises: procedure of (324a,..,324t) of receiving at the first communication device (310) one or more quality indication signals (signals transmitted from (350)); and procedure (332, 334) of establishing the one or more quality indicators according to the one or more quality indication signals (see figures 3, 4C, 5 and 6A, [0178-0192]).

-Regarding to claim 3, Walton et al discloses that establishing the one or more quality indicators at the first communication device further comprises: procedure of detecting the quality (e.g. SNR) of the communication link; and

calculating the one or more quality indicators (CSI) according to the quality (see [0178-0192]).

-Regarding to claim 4, Walton et al discloses that the second communication device (310) comprises a plurality of second antenna elements (352a,...,352r) (see figure 3).

-Regarding to claim 5, Walton et al discloses that the communication link is configured according to a Multiple-Input-Multiple-- Output (MIMO) communications protocol (see figure 3, [0131]).

-Regarding to claim 6, Walton et al discloses that the communication link is configurable according to CDMA, TDMA or FDMA (see [0023]).

-Regarding to claim 7, Walton et al discloses that the modification is associated with an improvement of the transmitted signal, the improvement comprising reduced RF interference (see [0009-0012]).

-Regarding to claim 8, Walton et al discloses that the modification describes the at least one adjustment of the one or more modulation features for a signal of the subset of signals (see (410a) of figure 4C).

-Regarding to claim 9, Walton et al discloses that the modulation features comprise a total power of the transmitted signal (see [0202]).

-Regarding to claim 12, Walton et al discloses that for an down link communication, the first communication device comprises a communication device (106) (considered here equivalent with the limitation "subscriber communication device"); and the one or more second communication devices comprise one or more stations (104) (considered here equivalent with the limitation "base stations") (see figure 1, [0226]).

-Regarding to claim 13, Walton et al disclose that for an up link communication, the first communication device comprises a station (104) (considered here equivalent with the limitation "base station"); and the one or more second communication devices comprise one or more communication devices (106) (considered here equivalent with the limitation "subscriber communication devices") (see figure 1, [0226]).

-Regarding to claim 14, Walton et al discloses that for a communication link, the first communication device comprises a first station (350) (considered here equivalent with the limitation ("first base station"); and the one or more

second communication devices comprise one or more second stations (310) (considered here equivalent with the limitation "second base stations") (see figure 3, [0229]).

-Regarding to claim 15, Walton et al discloses that for a communication link, the first communication device comprises a first station (350) (considered here equivalent with the limitation ("first subscriber communication device"); and the one or more second communication devices comprise one or more second stations (310) (considered here equivalent with the limitation "subscriber communication devices") (see figure 3, [0229]).

-Regarding to claim 16, as similarly applied to claims 1-9, 12-15 set forth above and herein incorporated, see figures 3, 4C, 5 and 6A, [0131-0135, 0158-0160, 0177-0192, 0200-0227]), Walton et al discloses a system (see figure 3) for communicating a signal, comprising:

a first communication device (310) operable to establish one or more quality indicators (full/partial CSI), the one or more quality indicators indicating a quality of one or more communication links between the first communication device (310) and one or more second communication devices (350), the first

communication device comprising: a plurality of antenna elements (324aa,..., 324t); and

a signal modifier (334, 314, 324a,...,324t) operable to: determine a modification according to the one or more quality indicators, the modification describing at least one adjustment of one or more modulation features of a plurality of modulation features for a frequency subband; modulate at least a subset of a plurality of signals in accordance with the modification, a signal of the plurality of signals associated with an antenna element of the plurality antenna elements, a signal of the plurality of signals having the frequency subband; and send the plurality of signals to the plurality of antenna elements to yield a transmitted signal.

-Claim 17 is rejected with similar reasons set forth for claim 2.

-Claim 18 is rejected with similar reasons set forth for claim 3.

-Claim 19 is rejected with similar reasons set forth for claim 4.

-Claim 20 is rejected with similar reasons set forth for claim 5.

-Claim 21 is rejected with similar reasons set forth for claim 6.

-Claim 22 is rejected with similar reasons set forth for claim 7.

-Claim 23 is rejected with similar reasons set forth for claim 8.

-Claim 24 is rejected with similar reasons set forth for claim 9.

-Claim 27 is rejected with similar reasons set forth for claim 12.

-Claim 28 is rejected with similar reasons set forth for claim 13.

-Claim 29 is rejected with similar reasons set forth for claim 14.

-Claim 30 is rejected with similar reasons set forth for claim 15.

-Regarding to claim 31, as similarly applied to claims 1-9, 12-15 set forth above and herein incorporated, see figures 3, 4C, 5 and 6A, [0131-0135, 0158-0160, 0177-0192, 0200-0227]), Walton et al discloses a logic (310) (see figure 3) for communicating a signal, the logic embodied in a medium and operable to: establish one or more quality indicators (full/partial-CSI) at a first communication device (310), the first communication device comprising a plurality of antenna elements (324a,...,324t), the one or more quality indicators indicating a quality of one or more communication links between the first communication device (310) and one or more second communication devices (350); determine a modification according to the one or more quality indicators, the modification describing at least one adjustment of one or more modulation

features of a plurality of modulation features for a frequency subband; modulate at least a subset of a plurality of signals in accordance with the modification, a signal of the plurality of signals associated with an antenna element of the plurality antenna elements, a signal of the plurality of signals having the frequency subband; and send the plurality of signals from the plurality of antenna elements to yield a transmitted signal.

-Claim 32 is rejected with similar reasons set forth for claim 2.

-Claim 33 is rejected with similar reasons set forth for claim 3.

-Claim 34 is rejected with similar reasons set forth for claim 4.

-Claim 35 is rejected with similar reasons set forth for claim 5.

-Claim 36 is rejected with similar reasons set forth for claim 6.

-Claim 37 is rejected with similar reasons set forth for claim 7.

-Claim 38 is rejected with similar reasons set forth for claim 8.

-Claim 39 is rejected with similar reasons set forth for claim 9.

-Claim 42 is rejected with similar reasons set forth for claim 12.

-Claim 43 is rejected with similar reasons set forth for claim 13.

-Claim 44 is rejected with similar reasons set forth for claim 14.

-Claim 45 is rejected with similar reasons set forth for claim 15.

Allowable Subject Matter

4. Claim 47 is allowed.

5. Claims 10, 11, 25, 26, 40 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanh D. Phu whose telephone number is (571)272-7857. The examiner can normally be reached on M-Th from 7:00-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sanh D. Phu
Examiner
Division 2618

10/24/06

SP

SANH D. PHU
PATENT EXAMINER